

A Look at PIANC-History: Presentation on 1902 Dusseldorf Congress

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Ladies and Gentlemen, I would like to thank you very much for your kind invitation and for giving me the opportunity to present today a small part of the historical development of the International Navigation Association (PIANC).

First of all this presentation offers me an excellent platform to send you the congratulations of the German PIANC section on the 100th anniversary of the foundation of PIANC's U.S.-section.

Before giving attention to the Navigation Congress 1902 in Düsseldorf, I would like to make some short remarks on the development of PIANC up to this date.

The quick industrialization at the end of the 19th century required considerable improvements in development and extension of inland waterways and harbours, to be able to cope with the strongly increasing transport mainly of bulk goods. Therefore many countries made important efforts to improve the useability of rivers for navigation and to connect them by canals, to build up extensive nets of waterways. And these waterways should exceed the boundaries of the individual states, where possible.

At that time congresses, in which internationally acknowledged, high-ranking professionals participated, were often chosen as a very effective way, not only of mutual information exchange and discussion, but also for preparation of decisions on important technical questions. During a study tour of experts from Belgium, the Netherlands and Germany, the Belgian engineer Auguste Gobert suggested to organize congresses for inland navigation also. Together with a group of Belgian private persons, who aimed at improving the connection between the ¹Belgian inland waterways and the seaports, he realized this idea very quickly and already in 1885 he organized the first Inland Navigation Congress in Brussels. With 400 participants coming from 13 nations this event was a great success.

Therefore with an interval of two years, similar events took place in Vienna, Frankfurt, Manchester, Paris and The Hague, on the initiative of the inviting town. For the course of the congress the respective organisation committees chose the basic structure, which is still valid today. This means detailed questions published in advance, discussions of submitted papers, working out conclusions and having technical excursions.

In 1894, during the congress in The Hague, it was decided to unite with the Ocean Navigation Congress. The latter was founded in Paris in 1889 at the occasion of the World Exhibition and its 2nd meeting had taken place in London in 1893. For all future congresses the name was changed into „Navigation Congress“ and the questions to be parallelly dealt with were separated into two sections. This was after all kept up to the last congress in 1998 in The Hague.

Later in my presentation I will also shortly deal with the creation of a permanent organisational structure for these navigation congresses, a topic which was repeatedly suggested since the first congress.

Now, for the 9th Navigation Congress, Düsseldorf invited the international community of experts. The city was strongly supported by the German Central Government – also in financial respect. For at that time the inviting city had to meet all the expenses.

Why especially Düsseldorf made the invitation? Since the industrialization in the second part of the 19th century Düsseldorf was the commercial and economic centre for the whole „Ruhrgebiet“, the biggest industrial area in Germany. Even today, the „Ruhrgebiet“ is one of the most important economic areas in Europe, comparable with the areas of London or Paris.

The year 1902 was very important in Düsseldorf's history. In 1902 the German Trade and Industry Exhibition took place in this city. This exhibition was considered as succession, but as well as answer to the World Exhibition 1900 in Paris, on which the German industry felt not represented sufficiently. This is a view on some exhibition buildings along the river Rhine.

Consequently the town was well prepared also by extensive construction measures. I would like to mention only those which are of interest for navigation and waterway engineering:

The existing ship bridge across the river Rhine was of course a danger for the navigation. On this picture you see it in opened condition during the passage of a cargo ship. First of all, it impaired the traffic between the two riversides. Thus it was replaced by an impressive arched bridge. It had a total length of 638 m and the span of the two arcs is 181 m each. It was one of the first arched bridges with such a wide span across the river Rhine.

Also the riverfront should be redesigned as a new and high water free avenue and riverside promenade. Therefore the bank was moved far into the Rhine with a new quay wall.

In March 1902, only after three years of construction work this new, very representative area of the riverside was opened. And this photo shows the Rhein-front 100 years later.

Some time before the new harbour, upstream of the town, was opened. This aerial picture shows the harbour after a later extension with the big basin (left side of the picture). In 1901 the harbour had a total cargo turn-over of 583.000 tons. A large part of the harbour today is transformed into a marina.

So, in the year 1902, the city of Düsseldorf had a lot to offer to its visitors, when it invited the IX. Navigation Congress from June 29th until Juli 4th. Following the tradition of previous congresses, the patronage was provided by HH the crown prince Wilhelm. This, of course, also promoted the public interest in this event.

1756 participants followed the invitation, about half of them coming from 26 foreign countries. The Congress was also attended by 299 ladies. This is the only picture showing some of the participants I could find in the archives. By the way, I learned from the proceedings, that while the gentlemen had the final dinner the ladies were invited for tea by the Lord Mayor's Lady. Fortunately in the meantime this habit has changed.

After the foundation of the U.S. section of PIANC in June 1902, an official delegation of the United States participated for the first time at a Navigation Congress. The group consisted of 16 persons led by Lieutenant Colonel Charles W. Raymond of the U.S. Corps of Engineers. Remarkable is the big number of foreign journalists. When reviewing the documents I counted besides 23 representatives of German news papers, magazines and press agencies, the same number of foreign correspondents. This is a clear sign of how much interest the public had in the navigation congresses at that time.

Not only the meetings of the Congress took place at the concert building of the town. At the same time there was a very comprehensive waterways and navigation exhibition, where the participants were also informed about the latest national and international projects of waterway engineering and technical developments.

But there was a further peculiarity. Under the congress-halls was the wine store of the city of Düsseldorf. About 400.000 liters of wine in barrels and bottles were deposited in the large cellars. May be, this inspired the thoughts of the participants during the sessions. As far as I know, never again a Navigation Congress had its meetings on a wine store.

As I mentioned before, the congress was divided into two sections, with three topics each:

1 technical

1 economic

1 question, which was of special interest at that time.

For the 6 topics 40 reports had been submitted and published before the congress in the three official congress languages French, English and German. German was an official congress-language until 1935. Reporter General for each question had evaluated the reports. Their reports published in the three languages also beforehand were the basis for the very intensive discussions during the sessions. The results of these discussions were fixed in conclusions, that means recommendations and subjects for further research, which were passed at the plenary session at the end of the congress. These conclusions were sometimes also the impulse for the installation of Study Commissions. I mention here only ICORELS (International Commission for the Reception of Large Ships) and ICOLD (International Commission on Large Dams). The latter developed into a separate, today also worldwide acting association.

For reasons of time I will not look in the subjects in detail. You can find them in the proceedings and also in an excellent synopsis in the PIANC-Centenary book, which was published in 1985.

Besides the reports on the given questions, the so-called communications, which were also published before the congress, offered the opportunity to inform soundly on actual topics and to exchange or complete information during the congresses.

I also don't want to go into detail of the 43 communications, which had been submitted to the Düsseldorf congress. Here in Vicksburg, the headquarters of the also abroad well known Waterways Experiment Station, I would like to give you just a single example for the excellent quality of such communications. On the III. Navigation Congress in 1888, Reynolds presented in such a communication for the first time his thoughts on the physical laws governing hydraulic investigations in river models. Reynolds was a British scholar who did important research in hydrodynamic problems. Reynold's laws on models are still valid today.

Following the repeated suggestions to give the Navigation Congress a permanent structure, the VIII Congress in Paris had passed the decision to change the study commission for investigation of organizational questions into an International Commission. And also a Permanent Bureau should be constituted from among its members. This Bureau should be seated in Brussels, the birthplace of the Navigation Congresses. These bodies should not only make arrangements for the next congress but should as well fix the requirements for a permanent organization.

In the course of the Congress in Düsseldorf a meeting of the Permanent International Commission was held on 2nd July. There it was announced that nearly 20 governments had already agreed to give financial support to the proposed Association. Thus, the financial basis was guaranteed. Then the draft of the statutes was discussed in detail and passed. If you look in the minutes of that meeting you will find, that they discussed nearly the same subjects we are doing at the moment by revising these statutes.

This was the formal foundation as a formal organization. Therefore the 2nd of July 1902 is the birthday of the Permanent International Association of Navigation Congresses. This year, may be on the 30th congress in Sydney, we could celebrate its 100th anniversary.

The congress finished with numerous excursions, during which the participants had the opportunity to get to know various technically very interesting facilities and constructions in Germany. To conclude, I would like to introduce two of them to you:

First, we are going to Henrichenburg. Here the participants could visit the ship lift, which started operation in 1899. It has a lift height of 13.5 m and could be used by ships up to 800 tons. At that time it was not only the biggest ship lift in the world but also the first, in which the weight balance is made by floaters. Because of this balance the ship chamber with a total weight of 3100 tons could be moved by one single engine of only 150 hp. It is today a historic landmark.

However, soon this ship lift could not cope with the strongly increasing traffic. If you visit this place today, you will find a real park of locks, Some people call it a working museum. You can recognize very well the development of the various types of constructions and dimensions. In 1962 a second ship lift following the same principle was built. It is suitable to lift ships up to 1350 tons.

Second, we are going to the Kiel-Canal. After 12 years of construction the Kiel-Canal was opened in the year 1895, being the second largest sea-canal in the world. This photo – taken during the building period – shows one of the 10 high bridges crossing the canal. The experiences gained during construction and then operation of this canal had been of special interest for the American participants in the Navigation Congress, for in 1901 the United States of America had gained the rights to build the Panama-Canal. And the head of the U.S. delegation, Lieutenant Colonel Raymond, informed in his speech at the final session, that the US-Congress had given its agreement on the construction of this interocean-canal only few days ago.

The Kiel-Canal connects the North Sea with the Baltic Sea and saves the navigation about 250 km. With about 38.000 ship passages per year it is the most frequented sea-canal

in the world. Already in the year 1900, more than 25.000 ships went through. Nowadays, ships with a length up to 235 m can use it. However, because of the passage through bridges, their height may not exceed 40 m.

There are locks at both ends of the canal, regulating the changing water levels of the Baltic Sea and the river Elbe, respectively. On the picture you can see two groups of locks – that is because only a few years after opening the dimensions were no longer sufficient and the construction of bigger locks was started in 1907 and finished in 1914. In that year also the Panama-Canal was opened on August 15th. Based on the experiences known internationally about the increasing of ship dimensions, the dimensions of the locks at the Panama-Canal were chosen very big all from the beginning. They are nearly the same as the new locks of the Kiel-Canal.

Coming to the end of my presentation i would like to show you one example of an unusual solution of a technical problem. This suspension- ferry is hanging under a train-bridge above the water level. It has the remarkable capacity of 42 tons and is still in operation today. The participants of the Navigation Congress also had visited this ferry, for it was opened in 1901. The ferry now brings us back to our century.

All the best for the next 100 years for the US section of PIANC and for the US Corps of Engineers, who has been supporting the US-PIANC Section very strongly since the beginning and in this way also PIANC-International.

Thank you for your kind attention.
